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Cultural Resources Monitoring Investigations for the San Antonio Water Systems (SAWS) Silverhorn Rehabilitation Project San Antonio, Bexar County, Texas

Jason M. Whitaker

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CULTURAL RESOURCES MONITORING INVESTIGATIONS FOR THE SAN ANTONIO WATER SYSTEMS (SAWS) SILVERHORN REHABILITATION PROJECT SAN ANTONIO, BEXAR COUNTY, TEXAS

FINAL REPORT (Redacted)

Prepared for:

K Friese + Associates
10001 Reunion Place Suite 404
San Antonio, Texas 78216

Prepared by:

Jason M. Whitaker M.A.

RABA-KISTNER ENVIRONMENTAL, INC.

12821 W. Golden Lane
San Antonio, Texas 78249

Principal Investigator

Jason M. Whitaker M.A.

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ABSTRACT

Raba Kistner, Inc. (RKI), was contracted by K Friese + Associates (*CLIENT*) to conduct cultural resources monitoring investigations for the San Antonio Water Systems (SAWS) Silverhorn Rehabilitation Project in northern San Antonio, Bexar County, Texas. The project involved rehabilitating 3,690 linear feet of existing sewer line within the Silverhorn Golf Club, which is within the Walker Ranch National Register District. The majority of the proposed undertaking was conducted by non-invasive methods (i.e., cured-in-place-pipe (CIPP)); however, point repairs involving excavations were conducted in areas where broken pipe was encountered. Given that the proposed undertaking is located on lands owned by the City of San Antonio (COSA), and because COSA is a political subdivision of the State of Texas, the project falls under the jurisdiction of Chapter 35 of the Unified Development Code (UDC) of the City of San Antonio, as well as the Antiquities Code of Texas (ACT). The UDC is regulated by the COSA Office of Historic Preservation (OHP), while the ACT is administered by the Texas Historical Commission (THC).

Cultural resources investigations for the project were conducted on January 11, 12, and 24, 2020. Jason M. Whitaker served as Principal Investigator and Project Manager for the duration of the project, and all fieldwork was completed by Jason M. Whitaker and Christopher Matthews. All work was conducted in accordance with the standards set forth by the Council of Texas Archeologists and adopted by the Texas Historical Commission, under Texas Antiquities Committee Permit Number 9220.

The overall undertaking consisted of the rehabilitation of approximately 3,690 linear feet of existing sewer line within the Silverhorn Golf Club. The majority of the project area was rehabilitated through the use of cured-in-place-pipe (CIPP) with no subsurface impacts. However, four areas along the 3,960 sewer line alignment were in need of point repairs which required subsurface excavations. For archaeological purposes, the Area of Potential Effects (APE) was comprised of four areas where subsurface excavations were conducted. Excavation within the APE areas were comprised of a single backhoe trench measuring approximately 22.3 by 13.1 feet (6.8 meters [m] by 4.0 m) and three 5-inch diameter boreholes. The combined area of impact of the APE areas measured approximately 0.007 acres. Depths of impacts reached 10.33 feet below surface within the trench, and a depth of 5.5 feet below surface.

Disturbances within the APE included the existing sewer line, golf course construction, and various associated utilities. The APE was located entirely within areas impacted by the installation of the existing

sewer line and was evident during the monitoring of the excavations. Evidence of previous disturbances was observed during the monitoring of the point repairs. No cultural deposits or features were documented during monitoring excavations of the SAWS Silverhorn Rehabilitation Project. Additionally, no evidence of unmarked burials or human remains were observed.

Given that excavations occurred over a previously excavated areas and no cultural materials were identified, **RKI** recommends no further archaeological investigations for the current APE. However, should additional point repairs along the existing sewer line be required, it is recommended that additional monitoring be conducted. All field records generated by this project will be permanently curated at the Center for Archaeological Research at the University of Texas at San Antonio.

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CHAPTER 1. INTRODUCTION

Raba Kistner, Inc. (RKI), was contracted by K Friese + Associates (*CLIENT*) to conduct cultural resources monitoring investigations for the San Antonio Water Systems (SAWS) Silverhorn Rehabilitation Project in northern San Antonio, Bexar County, Texas (**Figure 1-1**). The project involved rehabilitating 3,690 linear feet of existing sewer line within the Silverhorn Golf Club, which is within the Walker Ranch National Register District. Given that the project impacted lands owned by the City of San Antonio (COSA), and because COSA is a political subdivision of the State of Texas, the project was subject to review under the jurisdiction of Chapter 35 of the Unified Development Code (UDC) of the City of San Antonio, as well as the Antiquities Code of Texas (ACT) (Texas Natural Resources Code, Title 9, Chapter 191). These legislations call for the assessment of all improvement activities that have a potential disturb historically significant resources and significant subsurface deposits on lands owned by the State. The UDC is regulated by the COSA Office of Historic Preservation (OHP), while the ACT is administered by the Texas Historical Commission (THC).

Cultural resources investigations for the project were conducted on January 11, 12, and 24, 2020. Jason M. Whitaker served as Principal Investigator and Project Manager for the duration of the project, and all fieldwork was completed by Jason M. Whitaker and Christopher Matthews. All work was conducted in accordance with the standards set forth by the Council of Texas Archeologists (CTA) and adopted by the THC, under Texas Antiquities Committee Permit Number 9220.

Project Description and Area of Potential Effects

The overall undertaking consisted of the rehabilitation of approximately 3,690 linear feet of existing sewer line within the Silverhorn Golf Club (**Figure 1-2**). The project area is bordered on the east and south by residential development and Wurzbach Parkway at its southern terminus. The northern terminus of the project area is situated within the Silverhorn Golf course. The entire project area is located within the Walker Ranch National Register District, where numerous historic and prehistoric archaeological sites have been recorded. The entire project area is situated within an active golf course that is heavily manicured and is continuously impacted by landscaping activities. Additionally, the installation of the existing sewer line has caused significant disturbances.

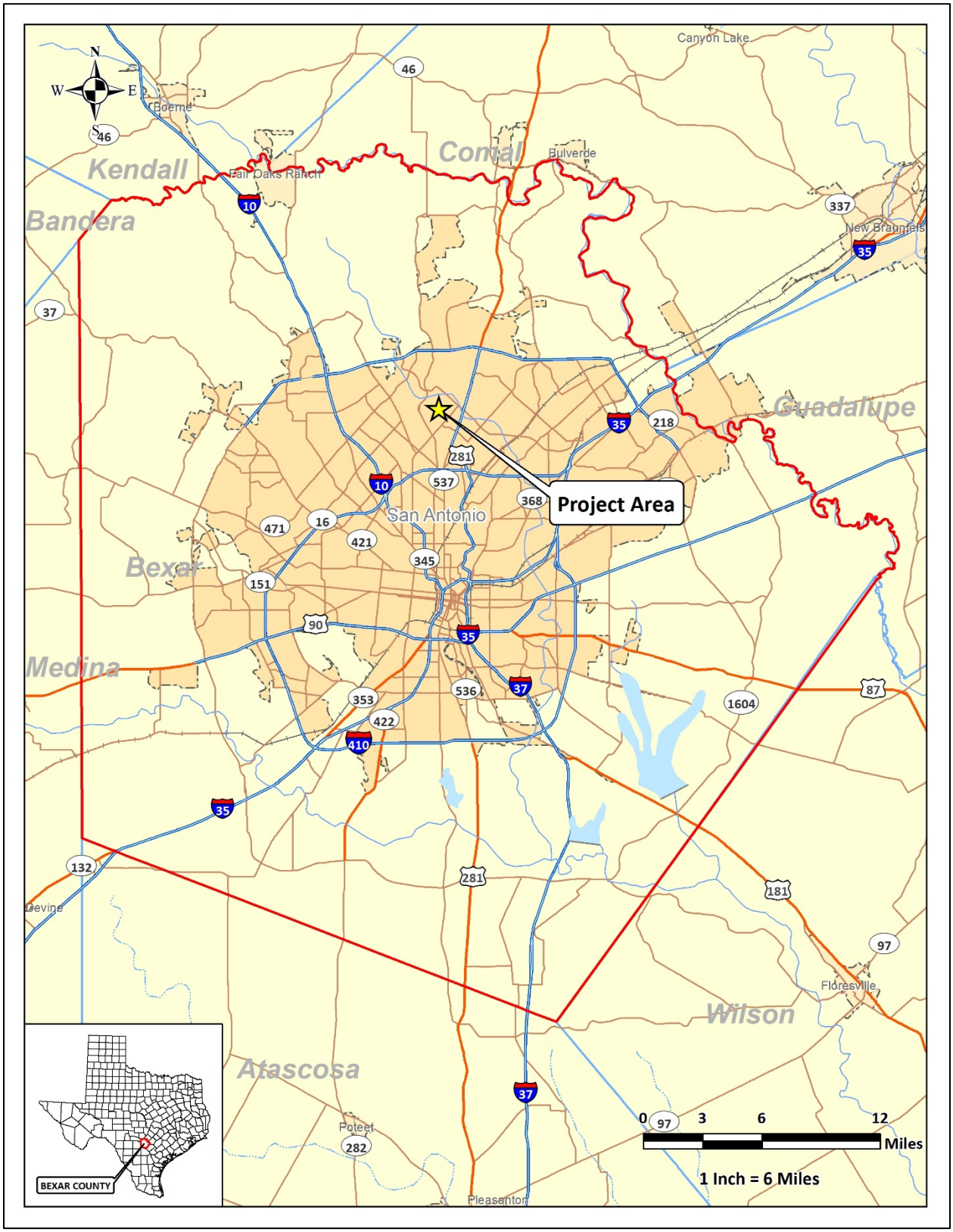

Figure 1-1. Project area location in northern San Antonio, Bexar County, Texas.

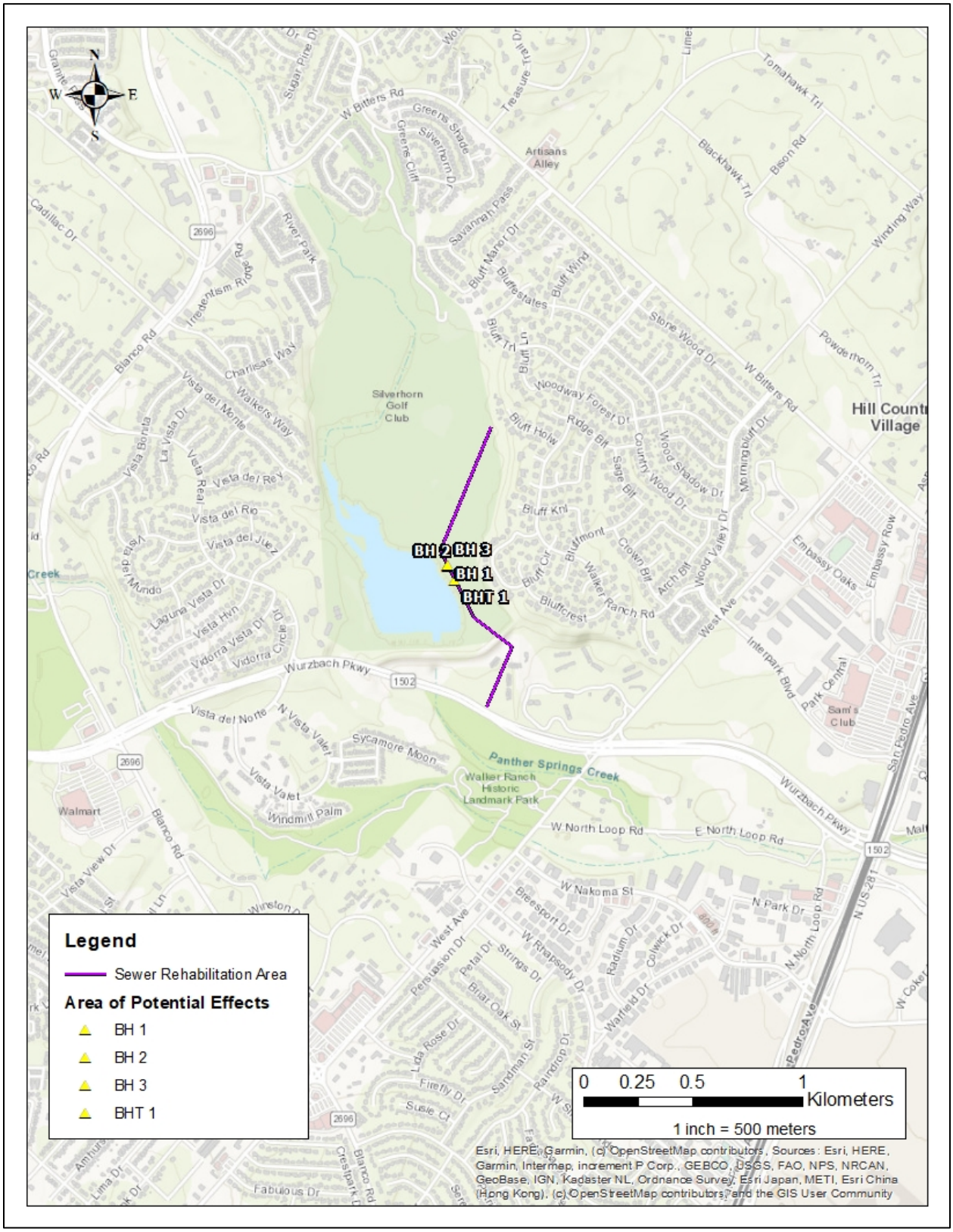

Figure 1-2. Overall project area and Area of Potential Effects.

The majority of the project area was rehabilitated through the use of cured-in-place-pipe (CIPP) with no subsurface impacts. However, four areas along the 3,960 sewer line alignment were in need of point repairs which required subsurface excavations. For archaeological purposes, the Area of Potential Effects (APE) was comprised of four areas where subsurface excavations were conducted (**see Figure 1-2**). Excavation within the APE areas were comprised of a single backhoe trench measuring approximately 22.3 feet by 13.1 feet (6.8 meters [m] by 4 m) and three, 5-inch diameter boreholes. The combined area of impact of the APE areas measured approximately 0.007 acres. Depths of impacts reached 10.33 feet below surface within the trench, and a depth of 5.5 feet below surface for the three boreholes.

CHAPTER 2. ENVIRONMENTAL SETTING

The project area is located within the Balcones Canyonlands region of the Edwards Plateau Ecoregion. The Balcones Canyonlands encompasses an area of Texas that spans 6,795 square-miles and were formed through uplift and subsidence along the Balcones Fault Zone during the Miocene Epoch (Griffith et al. 2007; Spearing 1991). The Balcones Canyonlands form the eroded southern border of the Edwards Plateau, and are highly dissected through the solution of springs, streams, and rivers working both above and below ground to create canyons, sinkholes, and caverns (Griffith et al. 2007). Situated between 650 and 2,400-feet above sea level, common vegetation in the ecoregion includes upland woodland species, such as plateau live oak (*Quercus fusiformis*), Texas oak (*Quercus buckleyi*), Ashe juniper (*Juniperus asheii*), and cedar elm (*Ulmus crassifolia*). Common species in grassland areas of the Balcones Canyonlands includes: little bluestem (*Schizachyrium scoparium*), yellow Indiangrass (*Sorghastrum nutans*), and sideoats grama (*Bouteloua curtipendula*) (Griffith et al. 2007).

Geology

The project area is underlain entirely by Fluviatile terrace deposits (Qt) (Bureau of Economic Geology 1983). The deposits consist of Pleistocene and Holocene sands, silts, clays, and gravels in various proportions. Gravel percentages within the terrace deposits vary with higher terraces containing more gravels than the lower terraces, which are typically capped with clayey silts and sands that are 6.6 feet to 13 feet (2 meters [m] to 4 m) thick. The terrace deposits along streams are locally indurated with calcium carbonate, which illustrates their great antiquity (United States Geological Survey [USGS] 2020).

Soils

A review of the Natural Resources Conservation Service (2020) show the soils mapped within the APE are Lewisville silty clay (LvB) with 1 to 3 percent slopes (**Figure 2-1**). Lewisville Series soils are characterized as well drained, very deep soils that reach a depth of 5 feet (1.57 m) below surface. Lewisville soils form in calcareous clayey alluvium derived from mudstone and are typically encountered along stream terraces.

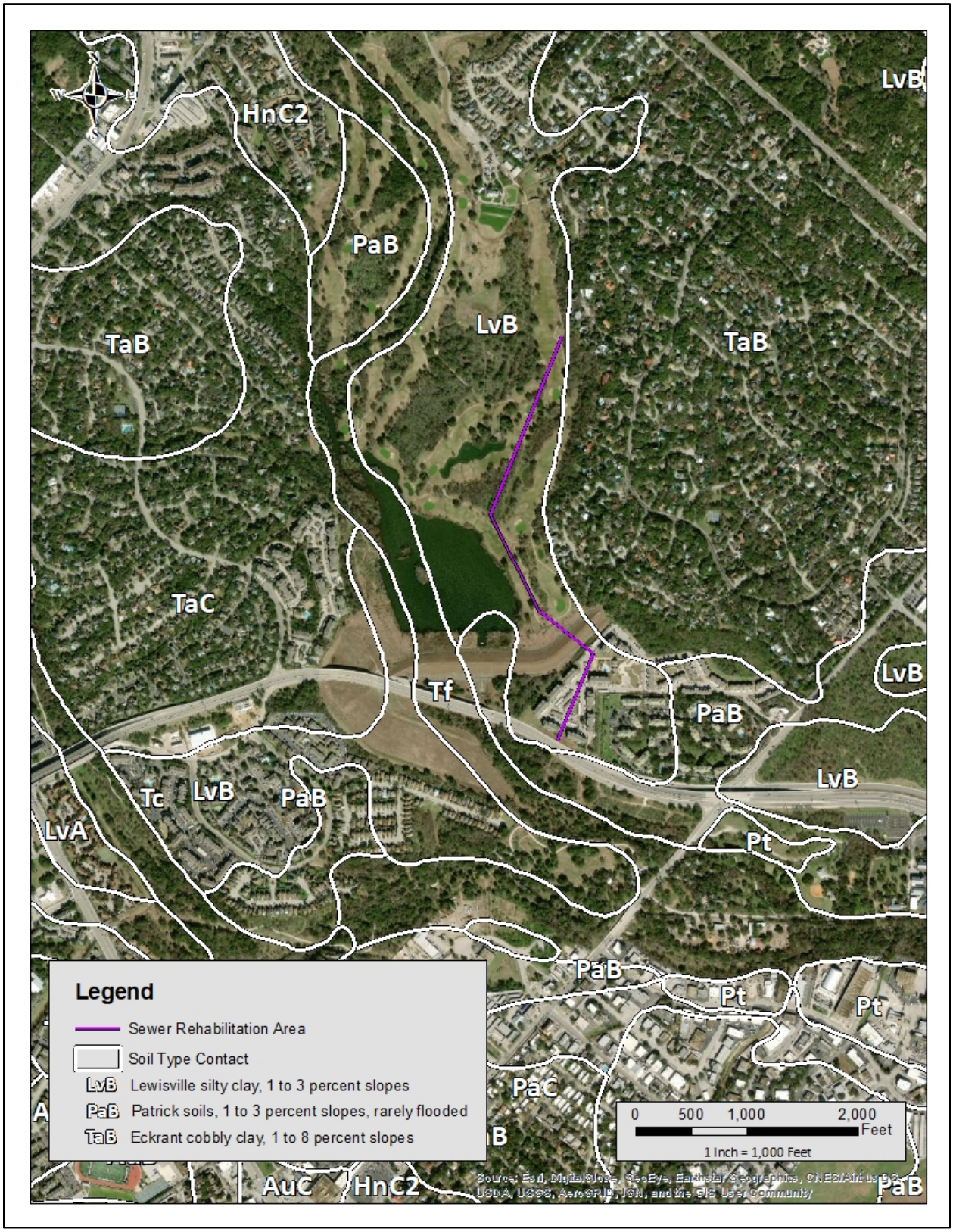

Figure 2-1. Soils associated with the project area.

CHAPTER 3. CULTURAL CONTEXT

The APE is located at the cusp of Central Texas and South Texas archaeological regions (Turner and Hester 1999). Based on extensive research conducted by Black (1989b), Collins (1995, 2004), Hester (2004), Johnson et al. (1962), Prewitt (1981, 1985), Sorrow et al. (1967), Suhm (1957, 1960), Suhm et al. (1954), and Weir (1976), Central Texas has a well-established chronological sequence beginning 12,000 years ago. The sequence for South Texas is less defined, though the project area likely shares many of the attributes identified for Central Texas. Nonetheless, the chronological sequence of Bexar County and the vicinity is divided in to four cultural periods, spanning approximately 11,500 years. Archaeologists have divided the occupation of the region into four principal periods and several sub-periods: Paleoindian (11,500–8800 B.P.), Archaic (8000–1200 B.P.), Late Prehistoric (1200–400 B.P.), and Historic (400 B.P. to present). The periods are characterized by changes in climatic conditions, distinct vegetation types and structure, and concomitant adaptive changes by human populations in hunting and gathering technologies and strategies, general material culture, and at the tail end of the cultural sequence, the arrival of non-indigenous populations.

Paleoindian Period

The oldest cultural materials found in the region date to the Paleoindian period. The period spans roughly from 11,500–8,800 B.P. (Collins 1995, 2004). The Aubrey site in Denton County has one of the earliest occupations, with radiocarbon assays dating to between 11,542 ± 11 B.P. and 11,590 ± 93 B.P. (Bousman et al. 2004:48). Paleoclimatic proxy measures suggest that a cooler climate with increased precipitation was predominant during the Late Pleistocene (Mauldin and Nickels 2001; Toomey et al 1993), the later portion of the period.

Initial reconstructions of Paleoindian adaptations typically viewed these hunter-gatherers as traversing extreme distances in pursuit of now extinct mega-fauna such as mammoth and mastodon. While these Paleoindian populations did exploit the Late Pleistocene mega-fauna when it was accessible, a number of faunal assemblages from a larger number of sites indicate that the Paleoindian diet was more varied and consisted of a wide range of resources, including small game and plants. The Lewisville (Winkler 1982) and the Aubrey sites (Ferring 2001) produced faunal assemblages that represented a wide range of taxa, including large, medium, and small species. Information on the consumption of plant resources during the

Paleoindian period is lacking. Bousman et al. (2004) reported that the late Paleoindian component at the Wilson-Leonard site reflected the exploitation of riparian, forest, and grassland species. Analysis of Paleoindian skeletal remains indicates that the diets of the Paleoindian and later Archaic hunter-gatherers may have been similar (Bousman et al. 2004; Powell and Steele 1994).

The early portion of the Paleoindian period was characterized by the appearance of Clovis and Folsom fluted projectile points that were used for hunting mega-fauna. Typical projectile points produced at sites with occupations dating to the later portion of the Paleoindian period included the Plainview, Dalton, Angostura, Golandrina, Meserve, and Scottsbluff types. Meltzer and Bever (1995) have identified 406 Clovis sites in Texas. One of the earliest, 41RB1, yielded radiocarbon assays that put the maximum age for the Paleoindian component at 11,415 ± 125 B.P. (Bousman et al. 2004:47).

Sites in Bexar County that contain Paleoindian components include St. Mary's Hall (Hester 1978, 1990), Pavo Real (Collins et al. 2003), the Richard Beene site (Thoms et al. 1996; Thoms and Mandel 2006) and 41BX1396 (Tomka 2012). St. Mary's Hall, 41BX229, was first encountered in 1972 during the construction of a house just outside the school's property. The Pavo Real site, 41BX52, is located along Leon Creek in northwest Bexar County. The site was first documented in 1970 and has been investigated several times over the past 40 years (Collins et al. 2003). The Richard Beene site, 41BX831, is located along the Medina River in southern Bexar County (Thoms et al. 1996). Site 41BX1396 is located in Brackenridge Park in San Antonio, and was encountered during installations for lighting in 2010. Dating of organic samples indicated that occupation at the site occurred as early as 10,490–10,230 B.P.

Archaic Period

The Archaic period dates between ca. 8,800 to 1,200 B.P. It is divided into three subperiods: Early, Middle, and Late. During the Archaic, mobility strategies may have shifted to more frequent short distance movements that allowed the exploitation of seasonal resource patches. The intermittent presence of bison in parts of Texas, combined with changes is climatic conditions and the primary productivity of the plant resources may have contributed to shifts in subsistence strategies and associated technological repertoire. When bison was not present in the region, hunting strategies focused on medium to small game along with continued foraging for plant resources. When bison was available, hunter-gatherers targeted the larger-bodied prey on a regular basis.

Early Archaic

The Early Archaic spans from 8,800 to 6,000 B.P. (Collins 1995, 2004). Projectile point styles characteristic of the Early Archaic includes Angostura, Early Split Stem, Martindale, and Uvalde (Collins 1995, 2004). The Early Archaic climate was drier than the Paleoindian period and witnessed a return to grasslands (Bousman 1998). Mega-fauna of the Paleoindian period could not survive the new climate and ecosystems, therefore eventually dying out. Early Archaic exploitation of medium to small fauna intensified.

The excavations at the Wilson-Leonard site (41WM235) produced a wealth of cultural materials representative of a lengthy period in regional prehistory. The projectile point assemblages from the site indicate that the lanceolate Paleoindian point forms continue from the Paleoindian into the Early Archaic (Angostura). However, relatively quickly during the Early Archaic, they are replaced by corner- and basally-notched and shouldered forms (Early Triangular, Andice, Bell) that quickly become the dominant points tipping the atlatl-thrown darts. In addition, the uses of small to medium hearths similar to the previous period were noted. The appearance of earth ovens suggests another shift in subsistence strategies. The earth ovens encountered at the Wilson-Leonard site were used to cook wild hyacinth along with aquatic and terrestrial resources (Collins et al. 1998). Analyses of Early Archaic human remains encountered in Kerr County (Bement 1991) reveal diets low in carbohydrates in comparison to the Early Archaic populations found in the Lower Pecos region.

Middle Archaic

The Middle Archaic sub-period spans from 6000 to 4000 B.P. (Collins 1995, 2004; Weir 1976). Archaeological data indicates that there appeared to be a population increase during this time. The climate was gradually drying leading to the onset of a long drought period. Changes to the demographics and cultural characteristics were likely in response to the warmer and more arid conditions. Projectile point styles characteristic of this sub-period include Bell, Andice, Calf Creek, Taylor, Nolan, and Travis.

Subsistence during the Middle Archaic saw an increased reliance on nuts and other products of riverine environments (Black 1989b). The increase of burned rock middens during the Middle Archaic represented the increased focus on the use of plant resources (Black 1989b; Johnson and Goode 1994). Little is known

about burial practices during the Middle Archaic. An excavation in an Uvalde County sinkhole (41UV4) contained 25–50 individuals (Johnson and Goode 1994:28).

Late Archaic

The Late Archaic spans from 4000 to 1200 B.P. (Collins 1995, 2004). It is represented by the Bulverde, Pedernales, Kinney, Lange, Marshall, Williams, Marcos, Montell, Castroville, Ensor, Frio, Fairland, and Darl projectile points. The early part of the Late Archaic exhibited fluctuations in both temperature and rainfall. There appears to have been an increase in population at this time (Nickels et al. 1998).

Some researchers believe that the use of burned rock middens decreased during the Late Archaic. Some research has challenged this notion (Black and Creel 1997; Mauldin et al. 2003). Johnson and Goode (1994) discuss the role of burned rock middens in relation to acorn processing.

Human remains from burials related to the Late Archaic in Central and South Texas suggest the region saw an increase in population. This increase may have prompted the establishment of territorial boundaries which resulted in boundary disputes (Story 1985). Human remains dating to this sub-period have been encountered near the Edwards Plateau.

Late Prehistoric Period

The Late Prehistoric period begins ca. 1200 B.P. (Collins 1995, 2004), and continues until the beginning of the Protohistoric period (ca. A.D. 1700). The term Late Prehistoric is used in Central and South Texas to designate the time following the end of the Archaic period. A series of traits characterizes the shift from the Archaic to the Late Prehistoric period. The main technological changes were the shift to the bow and arrow and the introduction of pottery. The Late Prehistoric period is divided into two phases: the Austin phase and the Toyah phase.

At the beginning of this period, environmental conditions were deemed to be warm and dry. Moister conditions appear after 1,000 B.P. (Mauldin and Nickels 2001). Subsistence practices appeared similar to the Late Archaic. Projectile points associated with the Austin phase include the Scallorn and Edwards types. The Toyah phase is characterized by the prominence of the Perdiz point (Collins 1995, 2004).

Most researchers concur that the early portion of the Late Prehistoric period saw a decrease in population density (Black 1989b:32). Radiocarbon dates from some sites have indicated that the middens were

utilized during the Late Prehistoric. Some archaeologists assert that the peak of midden use was after A.D. 1 and into the Late Prehistoric (Black and Creel 1997:273). Radiocarbon dates from Camp Bowie middens provide evidence that supports Black and Creel's arguments that burned rock middens were a primarily Late Prehistoric occurrence (Mauldin et al. 2003).

Beginning rather abruptly at about 650 B.P., a shift in technology occurred. This shift is characterized by the introduction of blade technology, the first ceramics in Central Texas (bone-tempered plainwares), the appearance of Perdiz arrow points, and alternately beveled bifaces (Black 1989b:32; Huebner 1991:346). Prewitt (1981) suggests this technology originated in north-central Texas. Patterson (1988), however, notes that the Perdiz point was first seen in southeast Texas by about 1350 B.P., and was introduced to west Texas some 600 to 700 years later.

Early ceramics in Central Texas (ca. A.D. 1250 to 1300) are associated with the Toyah phase of the Late Prehistoric and are referred to as Leon Plain ware. The Leon Plain ceramic types are undecorated, bone-tempered bowls, jars, and ollas with oxidized, burnished, and floated exterior surfaces (Ricklis 1995). There is notable variation within the type (Black 1986; Johnson 1994; Kalter et al. 2005). This variation can be attributed to differences in manufacturing techniques and cultural affiliation. Analysis of residues on ceramic sherds suggests that vessels were used to process bison bone grease/fat, mesquite bean/bison bone grease and deer/bison bone grease (Quigg et al. 1993).

The return of bison to South and Central Texas during the Late Prehistoric resulted from a drier climate in the plains located to the north of Texas and increased grasses in the Cross-Timbers and Post Oak Savannah in north-central Texas (Huebner 1991). The increased grasses in the two biotas formed the "bison corridor" along the eastern edge of the Edwards Plateau and into the South Texas Plain (Huebner 1991:354–355). Rock shelter sites, such as Scorpion Cave in Medina County (Highley et al. 1978) and Classen Rock Shelter in northern Bexar County (Fox and Fox 1967), have indicated a shift in settlement strategies (Skinner 1981). Burials encountered that dated to this period often reveal evidence on conflict (Black 1989b:32).

Historic Period

The beginnings of San Antonio came about with the establishment of Mission San Antonio de Valero in 1718. Fray Antonio de San Buenaventura y Olivares briefly visited the site several years prior, and

petitioned to set up a mission at the headwaters of the San Antonio River to act as a waypoint in the journey to East Texas. The Marques de Valero, Viceroy of New Spain, granted Olivares' request (de la Teja 1995). The mission, presidio, and villa were first established on the San Pedro Creek, the "first spring" of the San Antonio River. Mission Valero occupied at least one other location on the east side of the San Antonio River before it was moved in 1724 to its final location.

Four days after Mission Valero was founded, Presidio de Bexar was established on May 5, 1718. The presidio was to house the Spanish soldiers who had come along with the expedition to found the Mission. Typically, the families that followed the soldiers lived just outside the presidio.

Two years later, in 1720, Mission San José y San Miguel de Aguayo was established on the opposite bank of the San Antonio River, and to the south of Mission Valero and Presidio San Antonio de Bexar. This mission was established to help serve native groups that did not want to reside at Mission Valero because they were not on friendly terms with groups already living there. The original location of Mission San José was along the east bank of the San Antonio River, approximately three leagues from Mission Valero. The mission was then moved to the opposite bank sometime between 1724 and 1729, and relocated to its present site during the 1740s due to an epidemic (Scurlock et al. 1976:222).

In 1722, just two years after Mission San José was founded, Mission San Francisco Xavier de Nàjera was established. The mission was to serve a group of 50 Ervipiami families that came from the Brazos River area (Schuetz 1968:11). Mission San Francisco Xavier de Nàjera was located on or near the present site of Mission Concepción. The mission was unsuccessful due to a lack of funding. An attempt was made to make the mission a sub-mission of Valero, but this failed as well (Habig 1968:78-81). Its doors closed in 1726 (Schuetz 1968:11). Ivey (1984:13) argued that the closure of the mission was due to the natives' lack of interest in entering mission life.

Within the next few years, three other missions were established within the San Antonio area. The remaining three missions were established in San Antonio within weeks of each other in 1731. These three missions, Mission Nuestra Señora de la Purisima Concepción, Mission San Juan de Capistrano, and Mission San Francisco de la Espada, were originally missions established in east Texas. When each failed along the eastern border, they were moved to San Antonio.

In 1731, in addition to the five missions, Villa San Fernando de Bexar was established by the Canary Islanders. Prior to the establishment of Villa San Fernando, Villa de Bexar had been settled by 30 presidio soldiers, seven of whom were married and brought their families. Archival research indicates that upon arrival, the Canary Islanders immediately took over the land surrounding the garrison. This land was used as pasture and was originally property of Mission Valero. There had been a lack of cleared agricultural land at the time, leading Captain Juan Antonio Pérez de Almazán to allow the Canary Islanders use of the property (de la Teja 1995). The initial plan was for additional Canary Island settlers to be sent to San Antonio after the first group was established. Due to high costs to the Spanish Crown, no more groups were brought to Texas. The Canary Islanders launched a formal complaint against Mission Valero. In 1731, the Canary Islanders established their own villa, named San Fernando de Bexar, with their own church. The arrival of the Isleños resulted in the first clearly defined civilian settlement in San Antonio.

History of the Project Area

The first recorded transaction involving the property now known as Walker Ranch was records of the first-class head right of both Sterling N. Dobie and S.M. Dobie of land that had originally been granted to James B. Thompson (Texas General Land Office [TGLO] 2020a and b). The land was then transferred to Joseph Alexander Crews on February 22, 1842 (Bexar County Deed Records [BCDR] D2: 22). After being captured by General Adrian Woll on September 11, 1842, Joseph Crews was taken to the Perote prison, where he later perished (Gunn 2006). His estate transferred to his principal heirs (BCDR M-1:503-507, cited in Cox 2006). The property was then sold at public auction on March 3, 1846 by the sheriff of Bexar County for non-payment of taxes to Peter Odet (Cox 2006). The heirs of Joseph Crews were unaware of the transaction and brought suit against Peter Odet, which was later settled out of court (Bexar County District Court Records [BCDCR] Document No. 1722, cited in Cox 2006). Edward Higgins purchased the property on May 18, 1858 (BCDR P-2: 630-652), but later mortgaged the property to Harriet Eliza Thompson in December 1859 (BCDR R1: 652). Due to non-payment of the mortgage, Harriet Thompson sued for non-payment and was awarded the property in 1873 (Cox 2006). According to Cox (2006) Harriet Thompson died in 1872; thus her principal heir, Jennie W. de Ganahl petitioned the court on November 26 1873 and was awarded the property (BCDCR H: 218, cited in Cox 2006). After receiving clear title in 1874, the property was resurveyed and divided into 50 equal lots, six of which were sold thereafter (BCDR 4: 13, cited in Cox 2006). In February of 1884 Jennie de Ganahl sold a new right-of-way for Blanco Road to the City of San Antonio (BCDR 33: 396, cited in Cox 2006). On July 19, 1897, Charles de Ganahl sold the

property to his sister, Charissa F. Ganahl Walker (BCDR 166: 26, cited in Cox 2006). The Walker family continued to own a large part of the original ranch when the Walker Ranch National Register District was established in 1975 (National Register of Historic Places 2020).

Previous Archaeological Investigations and Cultural Resources.

A review of the Texas Archeological Sites Atlas (*Atlas*) was conducted in order to summarize all known cultural resources and surveys within a one-kilometer radius (0.62-mile) of the proposed project area. The project area is located entirely within the Walker Ranch National Register District, which encompasses numerous prehistoric and historic archaeological sites. The APE is adjacent to (within 300-feet) archaeological site 41BX180, which consists of the structural remains of two limestone buildings and three rock-lined subterranean structures with the possible remains of a compound (THC 2020). Further work for 41BX180 was recommended, but no eligibility determination for the site is available (**Figure 3-1**). A review of a one-kilometer radius of the project APE identified eight previously conducted cultural resources surveys within a kilometer of the project area. Additionally, 41 previously recorded archaeological sites have been mapped within a one-kilometer radius of the APE, most of which are within the Walker Ranch National Register District (**see Figure 3-1**, **Table 3-1**). Also, three historical markers are located within one-kilometer of the APE. Marker number 935 was placed in honor of John "Jack" Coker, a veteran of the battle of San Jacinto, who was awarded a land grant by the Republic of Texas, where, along with his brother established the Coker community in 1841 (Autry, 2020) (**Tables 3-2 and 3-3**).

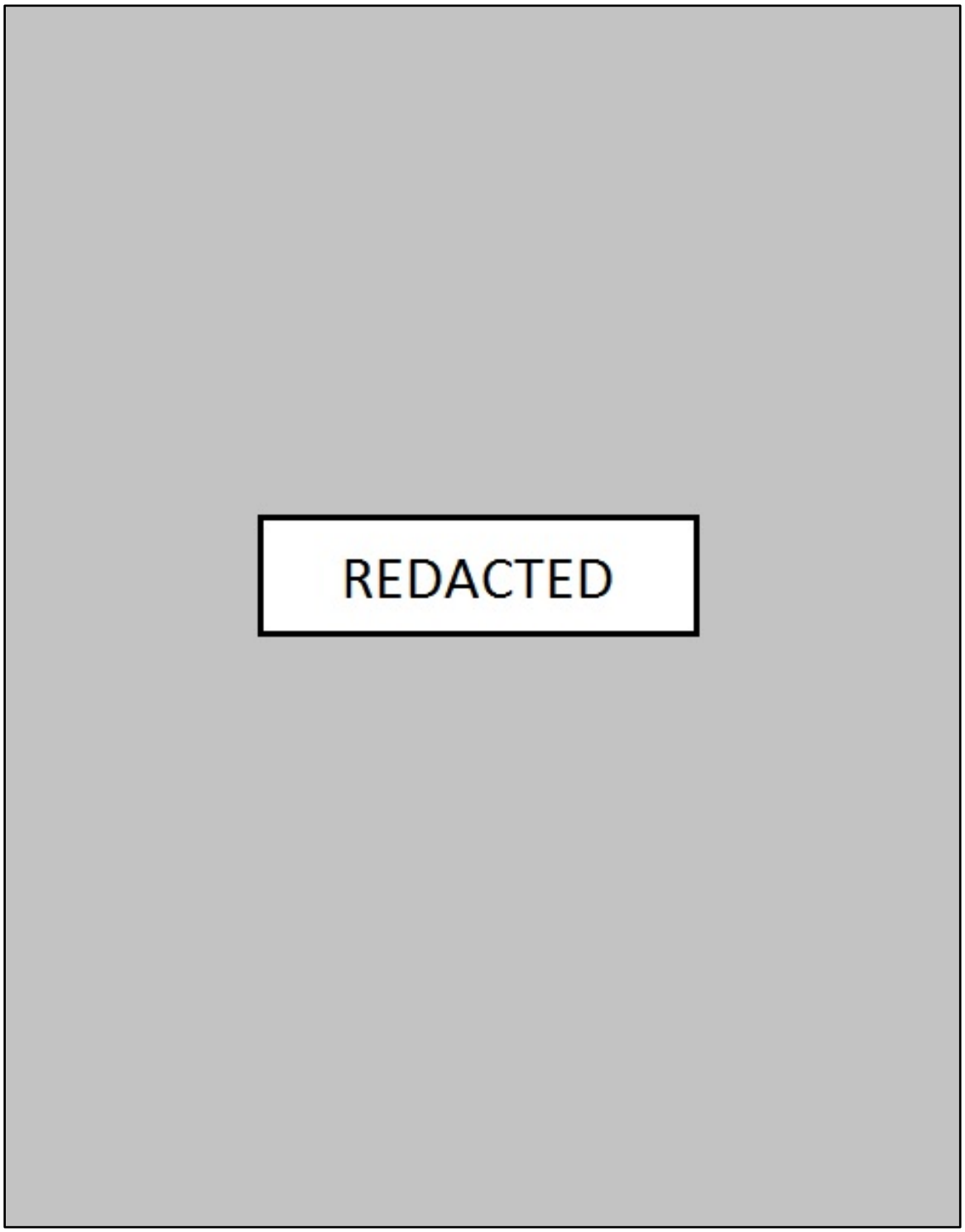

Figure 3-1. Previously recorded sites and surveys conducted within a 1 kilometer radius of the APE.

Table 3-1. Previously recorded sites within a 1-kilometer radius of the APE.

Resource	Site Name	Distance from APE (m/km)	NRHP/SAL Designation	Description, Recorder/Year
41BX180	Walker Ranch Ruins	125 m west	Unknown	Structural remains of two limestone building, three rock lined subterranean structures, and possible compound. Recorded by Scurlock and Crosby (1973).
41BX181	-	500 m south/southwest	Unknown	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX182	-	375 m west	Unknown	Middle Archaic campsite (Hudson (1973).
41BX183	-	500 m west/northwest	Unknown	Burned rock midden of Late Prehistoric age. Recorded by Hudson (1973).
41BX184	-	0.5km west	Ineligible within ROW	Prehistoric campsite-no diagnostics. Recorded by Hudson (1973).
41BX185	-	460m west	Unknown	Burned rock midden with lithic scatter and no diagnostics. Recorded by Hudson (1973).
41BX186	-	500m west	Unknown	Burned rock midden with small lithic scatter and no diagnostics. Recorded by Hudson (1973).
41BX187	-	630m west	Unknown	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX188	-	255m west	Unknown	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX189	Walker Ranch sites	420m east/northeast	NRHP Eligible (1996); SAL (1996)	Prehistoric midden. Recorded by Hudson (1973).
41BX190	-	800m west	Unknown	Burned rock and lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX191	-	330m west	Unknown	Small lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX192	-	270m southwest	Unknown	Lithic scatter with no diagnostics
41BX197	Walker Ranch Sites	630m southwest	NRHP Eligible (1996); SAL (2004)	Prehistoric Midden (Middle and Late Archaic periods). Originally recorded by Hudson (1973).
41BX198	-	430m west/southwest	Unknown	Large lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX199	-	350m west	Unknown	Small lithic scatter with no diagnostics. Recorded by Hudson (1973
41BX200	-	307m west	Unknown	Large open site with lithic scatter and no diagnostics. Recorded by Hudson (1973).
41BX201	-	560m west	Unknown	Small open terrace site with lithic scatter, but no diagnostics. Recorded by Hudson (1973).
41BX204	-	1,000m southwest	Unknown	Small open site with lithic scatter and no diagnostics. Recorded by Hudson (1973).
41BX205	-	1,000m southwest	Undetermined	Open terrace site with burned rock and limestone scatters. Site was disturbed through plowing and no diagnostics found. Recorded by Hudson (1973).
41BX206	-	920m southwest	Undetermined	Burned rock and lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX207	-	780m southwest	Undetermined	Open terrace site with burned rock and lithic scatter-no diagnostics encountered. Recorded by Hudson (1973).
41BX208	-	650m west	Undetermined	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX209	-	900m west/northwest	Undetermined	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX210	-	695m west/northwest	Undetermined	Burned rock and lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX214	-	890m southwest	Unknown	Burned rock and lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX216	-	785m southwest	Unknown	Lithic scatter in heavily disturbed zone with no diagnostics found. Recorded by Hudson (1973).
41BX217	-	305m west	Unknown	Burned rock and lithic scatter with no diagnostics. Hudson (1973) recommended further testing of the site.

Resource	Site Name	Distance from APE (m/km)	NRHP/SAL Designation	Description, Recorder/Year
41BX218	Walker Ranch Sites	645m northwest	NRHP Eligible (1996); SAL (2004)	Archaic period midden and campsite. Originally recorded by Hudson (1973).
41BX219	Walker Ranch Sites	640m northwest	NRHP Eligible (1996); SAL (2004)	Prehistoric Midden. Originally recorded by Hudson (1973).
41BX220	-	470m northwest	Unknown	Lithic scatter in heavily disturbed zone. Recorded by Hudson (1973).
41BX221	-	580m west	Unknown	Lithic scatter with no diagnostics. Recorded by Hudson (1973)
41BX222	-	115m southwest	Unknown	Lithic scatter with no diagnostics. Recorded by Hudson (1973).
41BX223	-	153m southwest	Unknown	Lithic scatter with no diagnostics. Hudson (1973) recommended further testing.
41BX228	Hudson-Lynn Site	176m northwest	NRHP ineligible within ROW	Burned rock midden, archaic and late prehistoric projectile points, bison bone. Recorded by Hudson and Lynn (1973).
41BX365	P 5B; 7-7	850m northwest	Unknown	Campsite and lithic scatter with no diagnostics. Recorded by CAR (1974)
41BX366	-	800m northwest	Unknown	Knapping site, recorded by CAR (1974)-no diagnostics uncovered.
41BX846	-	850m northwest	Unknown	Lithic scatter and Quarry. Diagnostics mentioned in site form, but no information pertaining to time-period.
41BX996	The Number 6 Site	120m north	Undetermined	Prehistoric open campsite and lithic scatter. No diagnostics mentioned on site form. Recorded by Potter (1993).
41BX1062	Coker Church	975m east	Ineligible within ROW	Prehistoric Open Campsite with bison bone, debitage, and FCR. No diagnostics reported. Recorded by Karbula (1994).
41BX1271	-	300m south/southeast	NRHP eligible (2012)	Prehistoric lithic scatter (time-period unknown). Recorded by Tomka (2006).

Table 3-2. Historical markers and cemeteries within a 1-kilometer radius of the APE.

Resource Type	Distance/Direction from Project Area	Brief Resource Description	Time-Period
Historical Marker	980m southeast	Jefferson Davis Smith (4960)	19th century
Historical Marker	930m southeast	John "Jack" Coker (935)	19th century
Historical Marker	950m southeast	Coker Cemetery (16417)	1857-present
Cemetery	800m southeast	Coker Cemetery (BX-C087)	1857-present

Table 3-3. National Register Districts within the APE.

District Name	Distance/Direction from Project Area	Brief Description	Date Listed
Walker Ranch	Intersects with APE	Numerous Prehistoric sites in area as well as historic remains (1700-1749 and 1850-1874)	2/24/1975

CHAPTER 4. METHODS OF INVESTIGATION

To ensure that rehabilitation efforts did not impact significant historic or prehistoric cultural resources, **RKI** archaeologists conducting archaeological monitoring of ground disturbing activities of all areas of point repair within the APE. Ground disturbing activities consisted of a single backhoe trench to realign the existing sewer-line segments and three 6-inch boreholes to facilitate minor repairs to the existing line. All work complied with THC and CTA standards for the overall project as well as Occupational Safety and Health Administration (OSHA) guidelines (29 CFR Part 1926) and the Texas Trench Safety Act (H.B. 1569).

Archaeological Monitoring

In order to efficiently and safely conduct archaeological monitoring at areas of point repair within the APE, an **RKI** archaeologist stood near active excavations, within a safe distance of heavy equipment, and observed the removal of soil matrix. Spoils from the excavations were examined by an **RKI** archaeologist to assess the presence or absence of cultural materials. In the case of backhoe trenching, the **RKI** archaeologist halted excavations at 4.5-feet below surface (1.3 meters) below surface as per OSHA standards concerning trench safety. Upon entry into the trench, the **RKI** archaeologist examined trench walls for cultural features and/or deposits as well as recording relevant soil information and photo documenting trench profiles.

The project adhered to a temporally diagnostic artifact collection only policy. All artifacts collected and project related documentation produced during monitoring activities will be prepared for curation in accordance with federal regulation 36 CFR Part 79, and THC requirements for State Held-in-Trust collections. Field notes, field forms, photographs, and field drawings will be placed into labeled archival folders and converted into electronic files. Digital photographs will be printed on acid-free paper, labeled with archivally appropriate materials, and will be placed in archival-quality plastic sleeves when needed. Ink-jet produced maps and illustrations will be placed in archival quality plastic page protectors to prevent against accidental smearing due to moisture. A copy of the report and all digital materials will be saved onto a CD and stored with field notes and documents. All project related documentation will be temporally housed at **RKI** offices. All project related records will be submitted to the Center for Archeological Research (CAR) University of Texas at San Antonio (UTSA) for final curation.

CHAPTER 5. RESULTS OF INVESTIGATIONS

On January 11, 12, and 24, 2020, **RKI** archaeologist conducted cultural resources monitoring investigations for the SAWS sewer line segment rehabilitation project (**Figure 5-1**). Jason M. Whitaker served as Principal Investigator and Project Manager throughout the duration of the project, and all field investigations were conducted by Jason M. Whitaker and Christopher Matthews. Overall, no intact cultural features or deposits were noted during monitoring investigations, and no evidence of unmarked burials of human remains were observed.

The project area was situated entirely within the Silverhorn Golf Club, which was surrounded on its north, east, and west sides by residential development. Adjacent to the southern terminus of the golf course was a dam as well as Wurzbach Parkway (**see Figure 1-2**). The primary disturbance noted within the APE was the existing sewer line, which all excavations were associated with. An additional source of disturbance noted within the project area was the construction of the golf course and associated concrete pathways, utilities, and, water bodies (**Figures 5-2**). Ground surface visibility was 0 to 10-percent.

Rehabilitation of the approximate 3,690-feet segment of sewer line primarily used a cure-in-place-pipe, which is a non-invasive method of repair for damaged sewer pipes. However, in four locations also known as the APE, required point repairs through invasive methods. The point repairs consisted of a single backhoe trench (**BHT1**) and three boreholes (**BH1-3**) (**see Figure 5-1**).

BHT1

Ground disturbing activities associated with BHT1 consisted of the excavation of a trench at the location of the broken pipe segment. The purpose of the trench was to realign a sewer line joint to facilitate CIPP rehabilitation (**Figure 5-3**). BHT1 was located near the southern terminus of Silverhorn Golf Club approximately 0.27-mile (0.43-km) north of Wurzbach Parkway (**see Figure 5-1**). The original proportions of the trench were 11-feet (3.3-m) in length and 4.5-feet (1.3-m) in width with a maximum depth of 8-feet (2.4-m) below surface (**Figure 5-4**). Due to continual trench collapse, however, Point Repair 1 was eventually expanded to 22.3-feet (6.8-m) in length and 13.1-feet (4.0-m) in width with a maximum depth of 10.33-feet (3.15-m) below ground surface (**Figure 5-5**).

Examination of the trench wall at 4.5-feet (1.3-m) below ground surface showed that the soil profile consisted of: Level I, a very dark grayish brown (10YR 3/2) clay loam with 2-percent roots and 3-percent gravels that extended to a depth of 11-inches (27 centimeters [cm]); Level II, brown (7.5YR 4/4) clay loam with 50-precent gravels and two-percent mottles of a very dark grayish brown clay loam that extended to a depth 27-inches (69-cm); and Level III, a yellow (10YR 7/6) silty clay loam with 20-percent gravels and mottling consisting of yellowish brown (10YR 5/8) silty clay (ca. 5-percent of matrix), very dark grayish brown (10YR 3/2) clay loam (ca. 2-percent of matrix), and a light yellowish brown (2.5Y 6/4) silty clay (ca. 5-percent of matrix), which was recorded extending to the 10.33-feet (3.15-m) maximum depth of the trench (**Figure 5-6**).

Since BHT1 was over an existing sewer line disturbances were expected. Observations made during and after the excavation of the trench were consistent with an area that had previously been excavated. In addition to the previously mentioned sewer line running parallel with the trench, electrical lines and a water line were observed running perpendicular to the trench at 25- and 26-inches (65- and 68-cm) below surface, respectively near the trench's southern terminus (**Figure 5-7**). Additionally, the matrix associated with BHT1 was observed to have an inconsistent distribution of both mottling and gravel inclusions (**see Figure 5-6**).

BH1-3

Located between 6.6 feet and 16.4 feet (2.0 m and 5.0 m) from an existing manhole, three boreholes (BH1-3) were excavated with a hydrovac in order to make point repairs to the existing sewer line (**see Figure 5-1 and 5-8**). Each borehole measured 6-inches (15-cm) in diameter and were excavated to a depth of 5.5-feet (1.6-m) below ground surface. Once the maximum borehole depth was reached, the work crew made point repairs by filling the holes with cement, which served to plug any holes in the existing sewer line.

Observations made by the **RKI** archaeologist during the excavation of boreholes are consistent with those made during the excavation of BHT1. Materials removed from the boreholes consisted of heavily mottled soils as well as large amounts of gravels and cobbles (**see Figure 5-8**). No cultural materials were identified through the monitoring of the excavations of BH1-3.

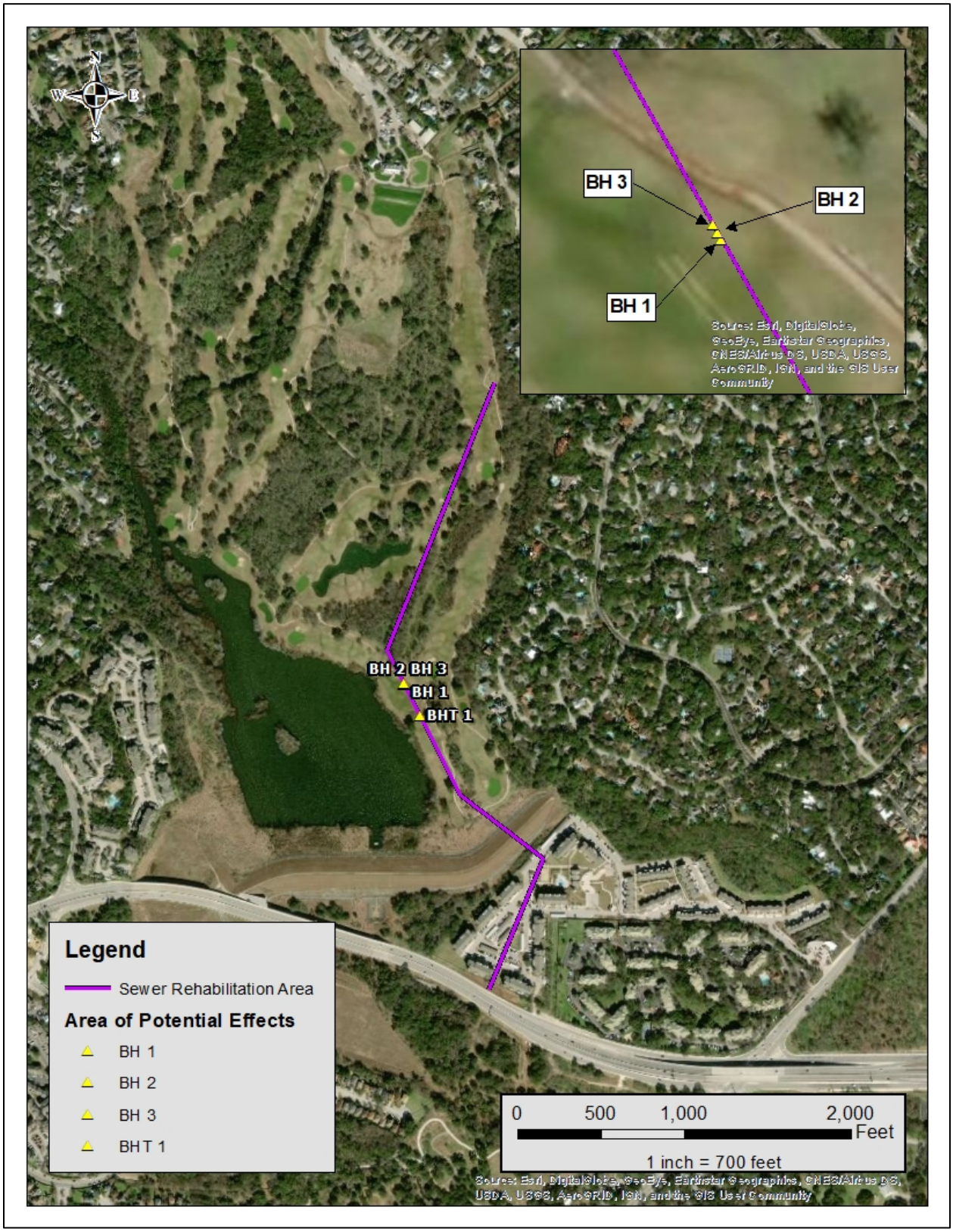

Figure 5-1. Results of excavations within the APE.

Figure 5-2. APE area showing land improvements associated with the golf course, facing south.

Figure 5-3. Misaligned pipe in BHT1, facing north.

Figure 5-4. Original proportions of BHT1 before collapse, facing northwest.

Figure 5-5. Maximum depth of BHT1, facing northeast.

Figure 5-6. BHT1 profile at 4.5-feet below surface, facing northwest.

Figure 5-7. Previously installed utilities in BHT1, facing south.

Figure 5-8. BH1-3 near existing manhole and associated gravels, facing northwest.

CHAPTER 6. SUMMARY AND RECOMMENDATIONS

Raba Kistner, Inc. (RKI), was contracted by K Friese +Associated (*CLIENT*) to conduct cultural resources monitoring investigations for the San Antonio Water Systems (SAWS) Silverhorn rehabilitation Project in northern San Antonio, Bexar County, Texas. The project involved rehabilitating the existing sewer line within the Silverhorn Golf Club, located within the Walker Ranch National Register District. Given that ground disturbing activities took place on lands owned by the City of San Antonio (COSA), and because COSA is a political subdivision of the State of Texas, the project fell under the jurisdiction of Chapter 35 of the Unified Development Code of the City of San Antonio, as well as the Antiquities Code of Texas. All work was conducted in accordance with the standards set forth by the Council of Texas Archeologists (CTA) and adopted by the THC, under Texas Antiquities Committee Permit Number 9220.

The overall undertaking consisted of the rehabilitation of approximately 3,690 linear feet of existing sewer line within the Silverhorn Golf Club. The majority of the project area was rehabilitated through the use of cured-in-place-pipe (CIPP) with no subsurface impacts. However, four areas along the 3,690 sewer line alignment were in need of point repairs which required subsurface excavations. For archaeological purposes, the Area of Potential Effects (APE) was comprised of four areas where subsurface excavations were conducted. Excavation within the APE areas consisted of a single backhoe trench and three boreholes.

Disturbances within the APE included the existing sewer line, golf course construction, and various associated utilities. The APE was located entirely within areas impacted by the installation of the existing sewer line and was evident during the monitoring of the excavations. Evidence of previous disturbances was observed during the monitoring of the point repairs. No cultural deposits or features were documented during monitoring excavations of the SAWS Silverhorn Rehabilitation Project. Additionally, no evidence of unmarked burials or human remains were observed.

Given that excavations occurred over a previously excavated areas and no cultural materials were identified, **RKI** recommends no further archaeological investigations for the current APE. However, should additional point repairs along the existing sewer line be required, it is recommended that additional monitoring be conducted.

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